Berlin, 22 – 25 September 2020

# InnoTrans 2020 Report

B2B-Magazine for the Railway Industry

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THEME IN FOCUS

■ RAILWAY TECHNOLOGY

## Improved availability

Wear and tear monitoring and detection systems are becoming increasingly versatile. Their common aim is to achieve improved availability through optimised maintenance systems.

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## Future for locomotive plant secured

CRRC ZELC is the new owner of Vossloh Locomotives GmbH. The takeover shall secure the future of the enterprise as well as the manufacturing site in Kiel.

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## Cybersecurity in rail traffic

Railway undertakings and manufacturers are increasingly confronted with safety issues of their systems. A cyber-attack would massively impact passenger safety as well as the image of the enterprise.

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## Mobility+ for the last mile

Intermodal mobility concepts are increasingly complementing public transport. Mobility+ will have its premiere within the Public Transport segment at InnoTrans 2020.

# European conference of ministers of transport to be held at InnoTrans 2020

Photo: Messe Berlin

There are no limits to the future of mobility – and least so by national borders. The future requires a well-developed and modern transport network throughout Europe for anyone who will use a climate-friendly train to travel to a business meeting or who will want to get to the destination of the family holiday by electric car. A challenge that the transport ministers of the EU Member States have to address jointly.

■ Germany will take over the EU Presidency in the second half of 2020. At the same time, Germany, Portugal and Slovenia will form the so-called trio presidency for a total of 18 months. The three states will formulate common goals and develop a concrete program, with which the Council will deal during the three presidencies. The informal meeting of the EU ministers of transport in Passau in October 2020 and the EU ministerial conference at InnoTrans on 21 September 2020 in Berlin will be important components of the program of the German Federal Minister of Transport Andreas Scheuer. Further to the ministerial conference to be held under the motto "Innovative freight transport – connected, sustainable, digital" on 21 September 2020, the German Federal Minister Andreas Scheuer invites his EU counterparts and other international ministers to a networking meeting as part of a lunch on the opening day of InnoTrans.

The German Railway Industry Association (VDB) will welcome minister Scheuer as its guest at the traditional dinner reception on the eve of the trade fair, 21 September. "We are very pleased that the German Federal Ministry of Transport will bring together European transport policy makers with the international industry at InnoTrans. InnoTrans is the largest mobility exhibition in the world – there is no other place where the strength of the transport industry can be seen every two years in this form. With regard to the challenges of climate protection in particular, it is essential to act together", says Kerstin Schulz, exhibition director of InnoTrans.

On Tuesday 22 September, minister Scheuer and the domestic and international colleagues are invited to the high-ranking Opening Ceremony of InnoTrans. You have the opportunity to visit the exhibition, but also to use InnoTrans as a platform for bilateral talks and networking.

Another highlight for VIPs and ministers is the biennial Rail Leaders' Summit, this time taking place on the afternoon of 22 September. Deutsche Bahn AG (DB AG) and the German Federal Ministry of Transport jointly invite around 400 high-ranking guests of the sector, including transport ministers and general directors of international transport companies, to discuss European and global transport issues.

## COMMENTARY

Dear reader,
the mobility sector is undergoing an exciting phase of departure. The word 'departure' always implies a process by which an objective is to be reached. But there is not only one single ultimate objective for the mobility sector. Any technological progress always strives for multiple targets. These are induced by the challenges that all of us are currently facing, as an industry as well as a society. One of these endeavours is a successful integration of digitisation into our infrastructure network. A new level of performance and faster data processing paves the way for a transformation and effective development of mobility. But this is no autonomous process. It needs close and intensive cooperation of many different domains. A field that particularly benefits from the progress of digitisation is that of electrical suppliers. With our new trade fair MES Expo we already anticipate the changes of mobility by offering a new platform to electrical component suppliers from 5 to 7 November. This exchange is essential for a successful change of mobility patterns. A further objective for the future of mobility consists in the construction of a transport network that offers climate-friendly alternatives.
We have therefore decided to put the issue of 'The Future of Mobility in times of climate change' on the agenda of the Opening Ceremony of upcoming InnoTrans. InnoTrans being the optimal venue for the creation of a future-oriented dialog between economic actors, associations and politicians. I therefore seize the opportunity of inviting you to get inspired at MES Expo in early November and at InnoTrans in September of next year, and to actively participate in the change of mobility.

Yours,
Matthias Steckmann
Senior Vice President
Business Unit Mobility & Services

Photo: Messe Berlin

# InnoTrans 2020: The future of mobility in times of climate change

*The new exhibition hall hub27 has been ceremoniously opened in August 2019.* Photo: Messe Berlin

While many industry sectors as well as the political world are currently facing great challenges due to the climate change, an inspiring optimistic mood prevails in the enterprises of the mobility sector.

While many industry sectors as well as the political world are currently facing great challenges due to the climate change, an inspiring optimistic mood prevails in the enterprises of the mobility sector. With the aim of achieving a neutral effect on the climate, first actions are gradually implemented in urban and regional, long-distance and freight traffic. Since January 2019 the electricity supply for the 15 major railway stations in Germany has exclusively come from renewable sources. They are being used by about 4.26 million persons daily. The Opening Ceremony of the world's leading trade fair for transport technology, InnoTrans, will be dedicated to the important subjects of environment protection and will thus provide space for a targeted international dialog among the actors of the mobility sector under the title "The Future of Mobility in times of climate change".

Less than one year before the opening of the thirteenth InnoTrans, the number of applications for a booth lies above the expectations. To match this unbroken trend of high demand, a new hall will be available for the first time at next year's InnoTrans: With its surface of about one and a half football pitches or 10,000 square metres (gross). The hub27 is one of the biggest free-spanning halls in Europe. The new hall, which will host the segment Railway Technology, will be integrated in the best possible way into the trade fair activities of InnoTrans via direct interconnections to halls 1 and 25. In all segments, the exhibitors will show their ideas, innovations and products to create more environment-friendly, efficient and safe transport solutions for the future. In the Bus Display, electric buses will make their rounds, the latest types of rolling stock will be displayed at the Outdoor and Track Display, and world premieres and high-level products will abound in the exhibition halls. The new special subject area Mobility+ will intensively deal with the first and last mile, and provide answers to the question on how public transport can reach one's doorstep. For the first time, InnoTrans will offer an exclusive platform for their presentations in hall 7.1c to exhibitors such as providers of shared micro-mobility, car- and ride-sharing as well as those who offer apps for information and booking. As a novelty in 2020, DVV Media Group will support the InnoTrans Campus as a career partner with a specific focus on the search for young talents. It is here where enterprises can directly care for young talents, either by direct job interviews or by presenting their own company as a potential employer. As early as a year before the opening of InnoTrans, the reviewed junior promotion programme finds a particular interest with students around the world and many of them wish to visit InnoTrans at least once.

The demand for exhibition space in the Travel Catering & Comfort services area is as high as ever. The independent subject area within the segment Interiors unites products and services around gastronomy devices and services in railway travel. Due to the fact that more and more travellers prefer rail, this subject will certainly become increasingly important in future.

Those who are still not tired of InnoTrans may like to visit us. They will find us from 5 to 7 November 2019 at MES Expo in Berlin. The new trade fair is targeting the supply industry of the electronic industry and networks exhibitors from the most diverse mobility sectors. InnoTrans presents itself with a dedicated booth in hall 2.2./262.

Tickets for InnoTrans will become available in spring 2020. Although 11,000 new hotel beds have been created in Berlin during this year, the total number of beds lies around 150,000. It is therefore recommended that exhibitors and trade visitors book a suitable accommodation early enough.

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# Mobility Cleaning Circle 2019

## Transport companies want to excel with clean vehicles.

The German Federal Government is currently aiming high: By 2030, the number of passengers in public urban, regional and long-distance traffic is set to double. In order to achieve this ambitious undertaking, transport companies have to consider several factors at the same time. Further to an efficient infrastructure, the cleanliness of trains and stations is of utmost importance for passengers in short- and long-distance traffic. This is also confirmed by a study carried out by the German traffic club (Verkehrsclub Deutschland). It says that around 90 percent of passengers rate a train as good or very good when the toilets are clean. If this single point is the only one that is not achieved, then only about every second user will judge the whole train positively. In order to ensure optimal cleanliness in transport, there is a need for a platform that allows the cleaning and mobility industries to communicate. Following the successful premiere of the Mobility Cleaning Circle in 2017, InnoTrans and CMS Berlin hosted the Mobility Cleaning Circle for the second time on 25 September 2019 at the Berlin ExpoCenter City. The tailor-made B2B event provided the ideal platform to promote the necessary dialogue between transport companies, railway and cleaning industries.

At the opening of the Mobility-Cleaning Circle, the growing importance of the topic for both sectors became clear very quickly. In the cinema auditorium of the Marshall House, representatives from both sectors discussed "Cleaning in the mobility sector". Various approaches and cleaning techniques were controversially discussed between experts such as Uwe Schwier, Head of Procurement Operating and Materials of Deutsche Bahn AG or Dr. Christine Sasse, CEO of Dr. Sasse AG.

### Industries are increasingly addressing the wishes of passengers

The constant need of both industries for a common platform became clear in both the panel discussion and the numerous technical exchanges that took place during the networking lunch of the Mobility Cleaning Circle. InnoTrans Director Kerstin Schulz emphasised the synergies between the mobility sector and the cleaning industry: "Cleanliness in trains and other public means of transport plays a key role for passengers. The great interest in the Mobility Cleaning Circle 2019 has once again proven that the industry is increasingly responding to the wishes of passengers".

Between halls 1.2 and 3.2 on the Outdoor Display, the trade visitors were able to examine the theoretical solution concepts in practice. This year, Berliner Verkehrsbetriebe (BVG) and the Brandenburg transport company Havelbus provided a bus each. Some exhibitors of CMS Berlin presented their specific products and cleaning process solutions and applied them to the objects. Special highlights were the fast and efficient removal of graffiti and new special vacuum cleaners that can remove soiling from seats in record time. In future, such devices shall ensure that public transport vehicles remain hygienic for a longer time. A factor that is closely linked to customer satisfaction, especially in big cities.

*Animated exchange* Photo: Messe Berlin

# CRRC ZELC takes over Vossloh Locomotives

*There should be no changes for the 480 employees in the Kiel-Suchsdorf factory.* Photo: Christoph Müller

CRRC ZELC will take over Vossloh Locomotives GmbH as an independent unit.

According to information from Vossloh, the contract was signed on 26 August. Vossloh Locomotives shall be operating as an autonomous unit independently from the Vienna-based CRRC ZELC Verkehrstechnik GmbH. The transaction is in particular subject to the approvals by the competent authorities in Europe and China. It is expected to become effective in the next months.

## Concentration on the core business

As early as at the end of 2014, Vossloh's board had decided to put Vossloh Locomotives up for sale and to focus the group completely on the business around railway infrastructure. An important step in this direction has now been achieved with the signature of the contract to sell Vossloh Locomotives to the Chinese CRRC. The two other business areas of the former transportation segment have been solved as early as in 2015 and 2017. With its shunting locomotives Vossloh Locomotives serves a narrow niche market in technological and geographical terms that was a considerable burden on its financial result and produced a net financial debt in recent years. There were no synergies with Vossloh's core business.

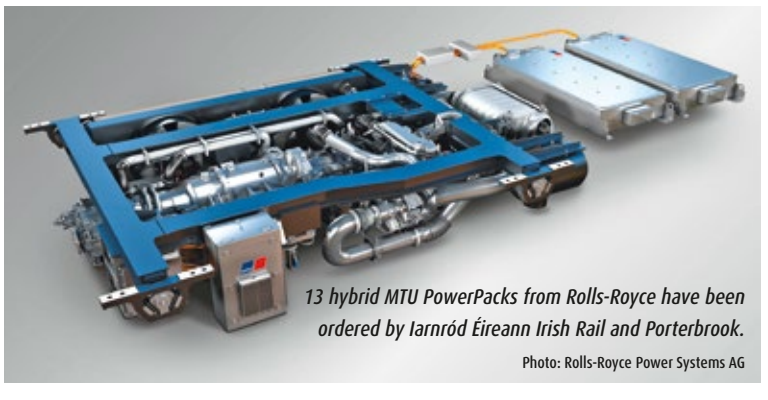
## Stability for Vossloh Locomotives

CRRC has been found as a partner for Vossloh to ensure the future of the business and to benefit from synergies. "It was important for us to leave Vossloh Locomotives in good hands. This is our duty not least for the men and women who work on the premises, and we have now succeeded. We have been convinced by the strategic concept of CRRC. The sale will give us stability and will end the many years of outflow of resources that we urgently need in our core business. After several years of exploration and intensive negotiations with a great number of possible partners we have now implemented the best of all alternatives for Vossloh with an overall very good result. We can also support the accounting losses thanks to our strong balance sheet", comments Andreas Busemann, Chairman of the Board of Vossloh AG.

According to Vossloh, the purchasing price will amount to a low single digit number of millions. The agreement furthermore foresees that Vossloh will receive revenues from the future sales of certain assets, from which they expect payments that may amount to about 10 million Euro. Vossloh Locomotives has made a loss of 2.1 million Euro in 2018 against a loss in the previous year 2017 of 35 million Euro. By purchasing Vossloh Locomotives, the Chinese CRRC is now successfully entering the European locomotive market.

# Rolls-Royce Power Systems: New brand image – positive half-year results

The Rolls-Royce business unit Power Systems, with MTU as its core brand will in future strongly enhance its focus on its corporate identity as an integral part of the British technology group Rolls-Royce.



*13 hybrid MTU PowerPacks from Rolls-Royce have been ordered by Iarnród Éireann Irish Rail and Porterbrook.* Photo: Rolls-Royce Power Systems AG

In line with the PS 2030 future strategy of the business unit Power Systems, the enterprises of the business unit that carry the letters MTU in their name will receive a new designation. For its customers, MTU is a well-known brand and will remain the label of its products and solutions which will carry the additional mention "A Rolls-Royce Solution" besides the MTU-label. This also means that MTU Friedrichshafen GmbH will become Rolls-Royce Solutions GmbH by autumn 2019. At the same time employees will receive email addresses that end with @rolls-royce.com as well as new work clothes that underline the fact that the MTU brand belongs to Rolls-Royce. It may be noted that the business unit has presented good half-year results with an increase of the adjusted turnover of 6 percent to 1.553 million British pounds. New products for integrated solutions of the Rolls-Royce business unit Power Systems have achieved first successes: 13 hybrid MTU-drives for railway power cars have been ordered by customers in the United Kingdom and Ireland. These orders confirm that it is important and worthwhile to invest in future technologies, but it is also necessary to have great staying power, says Andreas Schell, CEO of Rolls-Royce Power Systems AG.

# Extended management at Plasser & Theurer

Dr. Daniel Siedl and Dr. Winfried Büdenbender have been reinforcing the management team of Plasser & Theurer, Export von Bahnbaumaschinen, Gesellschaft m.b.H. since August 2019. In 2017 Plasser & Theurer had already started to adapt its structures to the future requirements of the market. After new managers have been appointed for the financial and sales departments, the design and production departments of track construction machines have now been reinforced.

Dr. Winfried Büdenbender is appointed as CTO (Chief Technical Officer) and Dr. Daniel Siedl as COO (Chief Operating Officer) in the management.

## Innovation for you

Plasser & Theurer's CEO and owner Johannes Max-Theurer commented: "Our motto 'Innovation for you' applies not only to our products but also to the way how we conceive, design and produce them. I am therefore happy that Dr. Büdenbender and Dr. Siedl support us in further strengthening the core competences of our enterprise, namely design and production."

## NEWS

### Kapsch becomes Kontron

Following the approval by all the competent authorities of the sale of the Kapsch CarrierCom Group, Kapsch Public TransportCom Belgium and Kapsch Public TransportCom North America, these companies now belong to the Austrian S&T AG. The transaction was finalised on 26 July 2019 after the corresponding agreement was signed in May of this year. The result of this transaction is that hundred percent of the shares of Kapsch CarrierCom as well as of all its subsidiaries are now held by S&T AG. Kapsch CarrierCom has been renamed Kontron Transportation Austria AG and operates under the management of Michael Riegert (CEO) and Bernd Eder (CFO). All the acquired segments are now aggregated in the Kontron Transportation Group and constitute the transport business of the segment IoT Solutions Europe. Kontron is an internationally leading provider of IoT/embedded computer technology (ECT). As part of the technology group S&T, Kontron offers a combined portfolio of safe hardware, middleware, services for the Internet of Things (IoT), Industry 4.0-applications and now also end-to-end communication solutions for Mission-Critical networks.

THEME IN FOCUS

**RAILWAY TECHNOLOGY**

# Maintenance planning for higher availability

A high level of operational availability and a reliable forward-looking scheduling of workshop service stops are paramount to ensure the transportation of steadily increasing passenger numbers. This not only reduces the costs for operators, but also increases productivity.

## One for all – new universal cable for railways and public transport

*The Bayka product range for public transport.* Graphic: Bayerische Kabelwerke AG

More and more specifications, ever increasing demands in terms of fire protection, durability and electrical load – there is an unmanageable variety of cable types. For the development of the BayMotion® soilblack and BayMotion® Tram cable families, Bayerische Kabelwerke AG (Bayka) therefore had one major goal: their universal applicability.

Bayka, a German enterprise with one of the longest backgrounds in cable manufacturing, offers a wide range of cables for railways and public transport companies in the fields of energy, earthing, telecommunications as well as control and safety technology. For some years now, the focus has also been on the customer-specific development of special cables.

### Adaptable and customised

"Doing more with less" does not apply to modern cables. On the contrary, products that meet many requirements are in demand. As a medium-sized manufacturer, Bayka can offer advantageous solutions thanks to its ability to react flexibly. With its wide competence related to materials, the company can quickly recognise the direction in which requirements are developing. Customer inquiries go straight into the engineering department and if necessary, Bayka's quality assurance laboratory can quickly build a new test stand. The machine park allows for cost-effective production even if only small quantities are needed. Such special projects often trigger innovative standard cable families.

For example, BayMotion® Tram: This is a flexible, halogen-free traction power cable of conductor category 5, especially for the energy supply of public transport rail systems. It can be earth-laid, and, thanks to its flexible cable design that allows for narrow bending radii, it can be laid from the substation to the circuit breaker on the mast without needing additional transitional sleeves or distribution cabinets.

### Halogen-free cables that can be buried

The halogen-free BayMotion® soilblack connection and control cables are all-rounders that have been specifically developed for applications with high requirements on fire protection and electromagnetic compatibility, such as substations and computer centres, but also for hospitals or mechanical and plant engineering. They withstand conductor temperatures of up to 90 °C and have therefore a significantly longer service life than PVC-insulated cables, for instance. They comply with the fire classes $B2_{ca}$ or $C_{ca}$ and are therefore flame retardant and self-extinguishing according to German BauPVO regulations. In addition, they are weatherproof and resistant to UV radiation, weather conditions, oil and ozone. Since they can be laid directly in earth, they enable a continuous and direct connection of various plants and parts of buildings. The customer can save on sleeves during installation and refrain from a double storage.

# Automated wheelset machining for metro operators

Rail vehicle wheelsets are continuously subject to wear during driving. They are regularly checked and the corresponding wheelset maintenance procedures are generally carried out at fixed intervals.

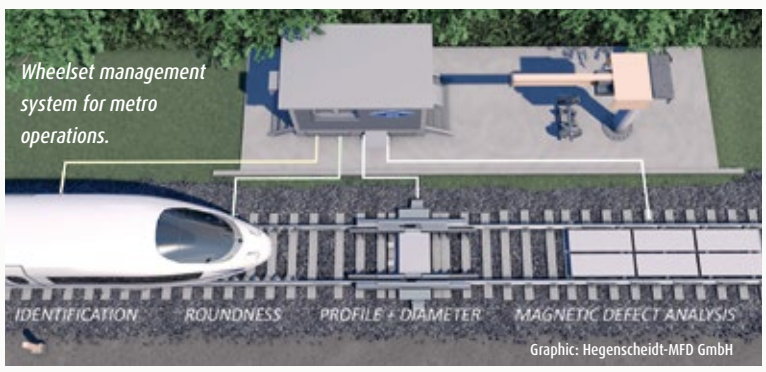
Where further optimisations of maintenance operations are achieved, it allows to extend the running times of wheelsets, while operators can also benefit from reduced costs.

Wear factors can be analysed on the basis of characteristic data accompanied by tracking the history of the wheelsets over their running and life time. Untapped optimisation potentials in wheelset maintenance can be identified and exploited on the basis of these analyses. Hegenscheidt-MFD GmbH, a company of the Niles-Simmons-Hegenscheidt Group (NSH), offers the wheelset diagnosis system ARGUS II® and the underfloor wheel lathe U2000-150, a complete wheelset management tool for this purpose.

Automatic stationary trackside measuring systems record the relevant data that are needed for wheelset maintenance, such as concentricity, profile, diameter and cracks. They provide intermediate values that chronologically log wheel wear conditions. The geometry of wheelsets is measured before and after they are reprofiled on the wheelset profiling lathes. Thus, information about the worn and newly profiled condition of the wheels are determined with results being logged.

### Data management and customer benefits

The central administration takes place in a database system, which manages all master data and rolling stock model series as well as the configuration of the trains of an entire fleet with interfaces to the measurement, test and processing statuses. The measured values are the basis for an analysis of the effective wear of the wheelsets, a forecast of the expected mileage and of the moment of a wear limit infraction. They also allow to establish a maintenance plan over the entire life cycle of a wheelset. The reports are presented in tabular and graphical form, key figure reports containing all relevant performance indicators are generated for decision makers, and excessive wear patterns are recorded in so-called "bad guy" lists. The system is about to be put into operation with Moscow Metro, where it will lead to significant cost savings through optimised wheelset maintenance plans and an improved fleet availability.




*Wheelset management system for metro operations.* Graphic: Hegenscheidt-MFD GmbH

# Smartset® – a patented wheelset axle monitoring solution

*The small sensor monitors the load data.*

Photo: Lucchini RS S.p.A.

The Italian Lucchini RS S.p.A. is a global steel group offering a large portfolio of high-tech products for high-speed trains, locomotives, passenger trains, trams and metros. Over the past two years Lucchini has invested in the development of a database and a model for experimental crack propagation tests for wheelset axles.

On the basis of the material properties and load conditions, the model simulates the propagation of an anticipated crack in a wheelset axle. Even if, on the one hand, fracture-mechanical properties were known, the real-life load conditions – where available – were limited to a few thousand kilometres of test rides during vehicle registration and thus not representative of the effective life span of the axle. With the Smartset® solution that has now been developed, railway operators can opt for a long-term monitoring of bending and torsional loads in some representative wheelset axles of a multiple unit trainset. This is ensured by an intelligent miniaturised sensor which is embedded in the axle and which periodically transmits the load data to an onboard data concentrator via a radio link. Smartset® is currently available with an onboard computer that receives the load data and sends them to a remote server. The data are then analysed by the Lucchini RS software which delivers the optimal interval for ultrasonic tests on the actual vehicle for the line conditions on which it operates. The research and development department of Lucchini RS is equipped with test rigs for testing railway wheelsets and their components under load even under dynamic conditions that are very similar to real operational conditions.

## Further development through competence

The department carries out type tests on new components for approval tests and develops new products with the aim of improving the performance in terms of fatigue strength, railway dynamics, noise reduction and improved comfort.

NEWS

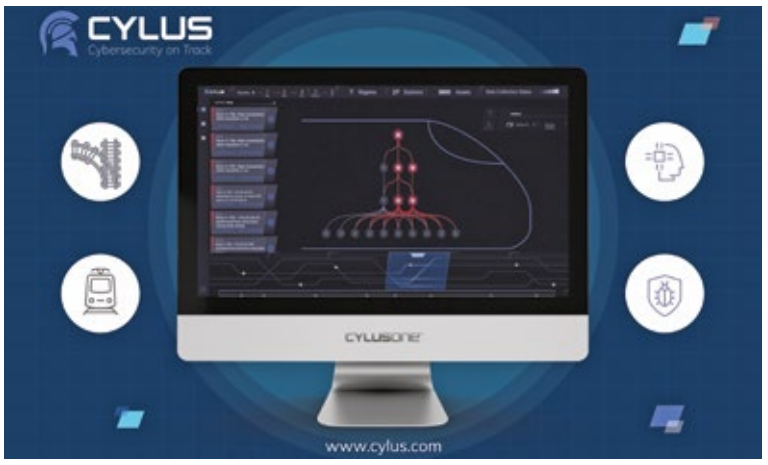
### Japanese Electronic Railway Control Centre for India

Kyosan Electric Mfg. Co., Ltd. (Kyosan Japan), a member of the Japan Overseas Railway System Association (JORSA), its daughter Kyosan India Pvt. Ltd. (Kyosan India) and TVM Signalling and Transportation Systems Private Limited (TSTS) have equipped the 100th Railway station of Indian Railways with the Electronic Railway Control Centre K5BMC. The SIL4-certified Electronic Railway Control Centre was the first Japanese system to be approved by the Research Designs and Standards Organization (RDSO) at the Ministry of Railways, India. So far, the K5BMC is in operation at more than 2,000 stations around the world. Kyosan Japan was responsible for product design and parts supply, Kyosan India and TSTS were jointly in charge of manufacturing, procurement, testing and commissioning.

Ad

# Software for cyber security in rail traffic

Safety has always been an essential element of public transport. Railway transport systems have evolved from manual and mechanical to automated and interconnected technologies. They continue to evolve towards intelligent systems that incorporate Artificial Intelligence (AI), Big Data, and the Internet of Things (IoT). At the same time, the demands on security are increasing.




*CylusOne detects cyber threats in signalling and control networks – along the line and on board.* Graphic: Roche & Granite Ltd.

The Tel Aviv-based Israeli company Cylus Ltd. has tackled this problem and developed CylusOne™, the first cyber security solution on the market that meets the unique requirements of the rail industry. Cylus' software-based solutions – CylusOne™ for Signalling and CylusOne™ for Rolling Stock – provide a complete view of the operational networks to immediately detect harmful attacks from outside. It includes both trackside and on-board systems. The warning messages are complemented by practicable intelligence that allows users to respond quickly and effectively. Cylus' patent-pending technology can be applied to long-distance, regional or local transport lines, supporting both advanced and legacy technologies.

## Technological progress and solutions

Cyber security of public transport systems that are used by millions of people around the world on their daily commutes is crucial. A cyber attack on a railway system not only has the potential to disrupt traffic, but it also endangers passenger safety and may severely damage railway operators. Technological developments in local and long-distance transport usually aim at achieving efficiency improvements, higher availability and increased competitiveness. However, as systems are becoming more complex and interconnected, they are also increasingly vulnerable to cyber attacks. Regulatory authorities as well as railway manufacturers and operators are aware of this. For example, the Network and Information Security (NIS) Directive as part of the EU cyber security strategy calls for the implementation of new cyber security measures. While the industry continues to invest heavily in safety, maintenance and passenger comfort technologies, Cylus provides a comprehensive solution specifically designed to protect passengers and rail vehicles from cyber attacks with its CylusOne™ software.

NEWS

### Bremer Strassenbahn AG expands its distribution channels with Abo-online from HanseCom

Customers of Bremer Strassenbahn AG (BSAG) can now benefit from Abo-Online from HanseCom, a virtual customer centre solution for real-time self-administration of season tickets. By transferring the order and management processes of annual passes to the web, the transport company can optimise its internal processes while customers will benefit from greater convenience at the same time. In this way, both the number of customers and the waiting times in the customer centre can be reduced. Lengthy and wasteful work steps in the back office are also eliminated, so that the employees in charge have more time to deliver a better customer service or to address other projects. The application under the name "Meine BSAG" now enables customers to comfortably manage their annual passes online around the clock. It is now very easy for customers to create subscriptions online, change payment and address data, and – when needed – modify existing contracts from home or while on the move. When choosing a suitable ticket, the customer is supported by an interactive tariff plan, in which he can mark the required tariff zones. Based on the selection, the application then determines the appropriate price level. HanseCom's Abo-Online is seamlessly integrated into the background customer management and sales system PTnova that is used by BSAG. Customer and product data are transferred in real time between the systems; no personal data is stored at the front-end. The solution is optimised for mobile devices and adapted to the corporate design of BSAG. Bremer Strassenbahn AG transports around 105 million passengers annually.

Photos: Kluge Kommunikation GmbH/HanseCom

*Instead of a ticket machine: Online season ticket.*

# New seats for the railways

Nearly six decades of experience in the production of passenger seats are both a commitment and a challenge for Vogelsitze GmbH, a medium-sized company based in the German city of Karlsruhe. Customers of the renowned manufacturer expect not only a perfect product, but also a trustful cooperation, reliability and professional skills.

Since summer 2018, Nevzat Tuna has been a managing director in the company. With his background of more than 35 years of expert knowledge in the field of passenger seat production, he is further promoting the development of innovative high-quality products. Vogelsitze is anticipating to be increasingly present in the railway sector.

## A classic on track to the future

With its proven and still ultramodern Pino Citybus and Bahn seat, Vogelsitze is the only manufacturer to offer a full shell seat that complies with the fire safety standards EN-45545 and German DIN 5510-2. The so-called 'functional wave' ensures a perfect comfort, optimum side support, and air circulation at the back.

For use in regional trains, a number of equipment variants of the Eco Rail seat is available.

All seat types can be supplied in several configurations, including a choice of accessories. As a novelty to be presented at InnoTrans 2020, Vogelsitze is planning to present the new System 300 seat for trams. The modular aluminium construction makes the System 300 an outstandingly light tram seat with a good seating comfort. It is designed for fast and easy maintenance and can be produced in many different colours so that any customer requirement will be met.

## Big plans for 2020

The new regional train seat Arondo Rail is also to be presented to the public at InnoTrans 2020.

*The 'functional wave': The Pino seat for city buses and trains.* Photo: Vogelsitze GmbH

# Railway BIM software for easier planning

RailCOMPLETE is a highly efficient software tool for planners of railway infrastructures that combines solid knowledge on railways with a modern CAD design tool. Developed by the Norwegian start-up Railcomplete AS, RailCOMPLETE® complements the definitely far too short list of software tools for technical rail infrastructure.

The AutoCAD® plug-in combines 2D, 3D and Building Information Modelling (BIM) for multidisciplinary projects – especially for tracks, catenaries, signalling, telecommunications, power supply and cable ducts. It can furthermore be adapted to the needs of rail administrations with virtually no limitations. This includes table layouts, reports, and objects that can be configured and subsequently tested according to the customer's specific regulations.

RailCOMPLETE® works with track layouts: tracks, roads, cables, ducts and turnout objects, signals, sensors, buffer stops, catenary masts, balises, etcetera. The user-friendly interface allows to insert objects that can then be fine-tuned and linked to the surrounding objects in the required manner.

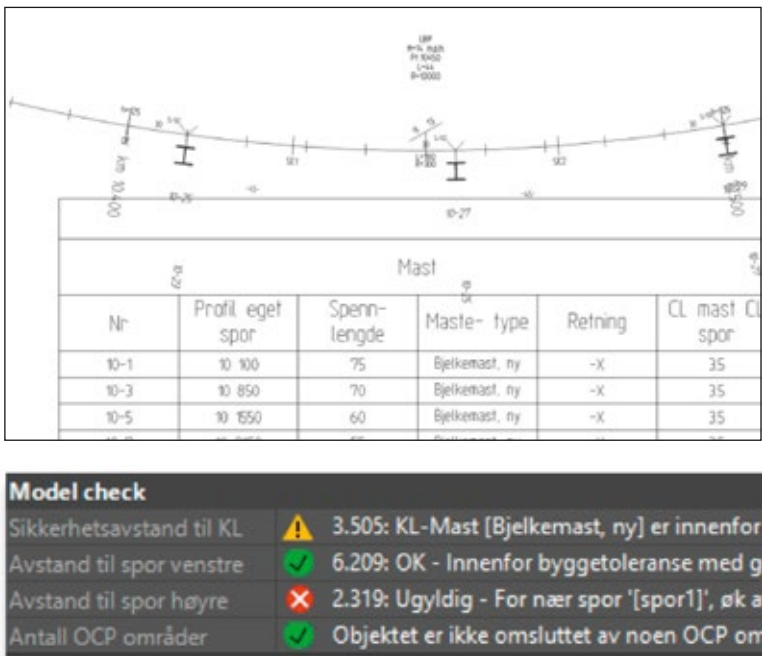
Newcomers need almost no experience with AutoCAD® to create their first working model, while novices and professionals alike benefit from the built-in Lua programming environment that allows to fine-tune any desired object behaviour.

## BIM short for Building Information Modelling

In the development of RailCOMPLETE®, BIM was in the foreground. During the planning, a navigable model of the railway network is created, that is constantly checked for consistency, correctness and completeness and warns about errors.

Consultants and contractors refine the 2D and corresponding 3D models during engineering, procurement, and design – creating a continually growing model with steadily growing precision and correctness, which is passed from one trade to the other within the production chain. If the model changes, the tables are automatically updated.

RailCOMPLETE® can help to reduce public spending on rail planning and at the same time supply a higher precision with the additional advantage of reducing the risk of later construction errors. Bane NOR (formerly Jernbaneverket) is already cooperating with its suppliers of software and consulting services to introduce BIM into all major EPC projects of the railway. Norconsult, a leading Norwegian BIM engineering company for rail transport, has been a RailCOMPLETE® user since 2016 and has used it successfully on several projects for Bane NOR.




*Automatically created table from a BIM model.* Graphic: Railcomplete AS

# Climate neutral for railway tunnels

Photo: private

*Climate neutral with certificate: Peter Hodapp in front of the company headquarters.*

Steel gates and doors are indispensable in railway tunnel construction. As a medium-sized company with 70 years of experience in the construction of steel gates and doors of all kinds such as hinged, folding, sliding and lifting/lowering gates, Hodapp GmbH & Co. KG can also carry out special constructions.

With in-house planning and design capabilities, tailor-made customised products that are suitable for difficult installation situations are offered among others.

## German EBA approval

Used in railway or metro tunnels, they are subject to particularly strict regulatory requirements by the railway supervisory authorities. The German Federal Railway Authority (EBA) has approved the swing doors as fire-retardant, smoke-tight and self-closing escape doors (EI2 30 CSm or T30-RS) with aerodynamic load. Thus, these doors are approved for installation between the railway tunnels and the connecting structures, the emergency exits or the escape galleries of railway tunnels in Germany.

Numerous reference projects in Germany as well as in other countries – especially in Europe – such as the Copenhagen metro tunnel, the Eurasian tunnel in Istanbul or the Simplon and Lötschberg tunnels in Switzerland have already been equipped. Sustainability and environmental protection are the central themes of our time, and they also have an impact on the railway industry. Managing director Peter Hodapp has therefore commissioned a $CO_2$ footprint of the company to be established. He was very surprised to learn that the journeys of the employees to the company, the trips of the suppliers as well as gas, electricity and oil consumption at the company location in Achern produce an annual output of 1,187 tons of $CO_2$.

## Environmental Certificate

Compensation certificates were therefore purchased for the expected $CO_2$ emissions in 2019 and 2020. Thus, Hodapp GmbH & Co. KG is the only steel gate manufacturer to have been awarded a certificate for a climate-neutral company.

> ***The environment does not need us, but we need the environment.***

In the medium and long term, however, the goal is to significantly reduce $CO_2$ emissions, for example by increasingly switching to trains instead of air travel for business trips, videoconferencing and changing to self-generated electricity.

"We wanted to set a signal. The environment does not need us, but we need the environment," says Peter Hodapp.

NEWS

## Cooperation for more user knowledge

For some months, IB&T Software GmbH has been cooperating with STRABAG SE and Bickhardt Bau AG. Two further cooperation agreements have meanwhile been concluded: with EIBS GmbH and with Verkehrs- und Ingenieurbau Consult GmbH. The common goal is to further develop the BIM functionalities in the software solution card_1. The cooperation allows to benefit from more practical knowledge – in future, planning tasks of users will be more pragmatic, efficient and BIM-compliant. IB&T integrates the engineering offices and operative units of the cooperation partners into the development process, for example for assessing and developing specifications and for the provision of test versions as well. In return, the companies are contributing their technical know-how and their experience on the application of BIM in traffic infrastructures and are testing the preliminary versions of the software. Between the results of a planning process and the requirements of an operational work preparation, cost calculation and ultimately a practical implementation in the construction, there is currently room for improvement with regard to the digital data transfer. These must be identified and revitalised with practical solutions. IB&T also concluded new framework agreements with several cooperation partners. Thus, recently developed functionalities, such as inventory modelling, virtual reality, IFC import/export were added to the contracts; workplaces will be equipped uniformly.

# New subject area Mobility+ to showcase innovative solutions for the "last mile"

Photo: Messe Berlin

*The new exhibition area Mobility+ will have its exhibition space in hall 7.1c.*

Combined mobility enriches the offer of public transport and makes direct travelling from A to B easier for passengers. For quite some time there has been a search for smart mobility solutions. They aim at achieving a fast transfer from the railway station to the final destination of travellers that is as customer-friendly, efficient and sustainable as possible.

The ongoing digitisation and the change in mobility patterns created a new spectrum of mobility solutions with many innovative concepts and providers. Customer-friendly solutions, such as rental bikes and cars that can be booked through an app have already been offered to passengers for some years. But the sector is not at a standstill – it works continuously on further flexible solutions. The demand of passengers for flexible locomotion enables providers of complementary mobility services to find appropriate and comfortable solutions to round off the classical transportation services of public transport. New intermodal mobility concepts are quickly entering the market. This year we have, for example, seen the introduction of e-scooters for the last mile in numerous German cities. The new dedicated subject area Mobility+ will therefore be offered at InnoTrans 2020 for the first time.

Mobility+ is targeting providers of complementary mobility services. It is part of the existing Public Transport segment and concentrates on shared mobility, combined mobility as well as digital mobility platforms and micro-mobility.

## Mobility+ creates new synergies

Trade visitors will find the new subject area in hall 7.1c. InnoTrans director Kerstin Schulz outlines above all the added value for all actors of the sector: "As the world's largest trade show for transport technology and featuring concepts and systems for all means of transport, InnoTrans is the ideal platform for presenting your own products and services. It is the meeting place for international transport enterprises, linked transport networks and public administration, as well as for leading experts from all over the world. InnoTrans is a display for professionals in the mobility sector – making it the perfect place for new businesses and new stakeholders seeking to establish themselves in the mobility sector".

Trade visitors can be eager to get to know the innovative ideas and mobility concepts the new exhibitors, including Cantamen, ZEITMEILEN, ViaVan, ioki and MOTIONTAG will present at InnoTrans 2020. Furthermore, there will be an accompanying forum that will deal extensively with the focused subjects.

# MES Expo presents a framework programme with innovative solutions for the shift in mobility

mes MOBILITY ELECTRONICS SUPPLIERS expo
BERLIN, 5–7 NOVEMBER 2019
mobility-electronics.com

Which requirements must be fulfilled to effectively boost the shift in mobility behaviour? This question will be an essential part of the professional framework programme of MES Expo that will take place from 5 to 7 November in Berlin.

The German Electrical and Electronic Manufacturers' Association (ZVEI), the Association of the German Railway Industry (VDB) and the German Transport Forum (DVF) will present themselves at the Dialog Forum of MES Expo. ZVEI will present some results of the study "Vision of the power distribution network" that has been carried out by the Association in cooperation with the management consultancy PwC, Fraunhofer IOSB and TrendOne. For VDB, it will be all about the issue Rail 4.0: The Association of the German Railway Industry will present innovations for the digital and intermodal mobility of tomorrow. The German Transport Forum will explain why digitisation in the context of connected mobility and climate protection makes traffic better. Under the motto: "The electric industry as an enabler of the shift in mobility" Siemens Mobility will think about the question what amount of added value lorries that are powered by overhead wires will be able to offer for the electrification of freight transport. The lecture of Bombardier Transportation will be about the battery-powered electric trainset TALENT 3 that is currently undergoing the approval process. Toyota Motor Europe will present solutions for sustainable mobility. Further subjects are the charging infrastructure for electromobility in public space (NOW GmbH) as well as the requirements for a modern building infrastructure to make clean mobility possible (hagergroup).

These subjects will be complemented by the presentations in the Procurement Forum as well as in the Speakers' corner. With the Procurement Center, MES Expo will bring purchasers and suppliers together. This is the place where manufacturers of rolling stock like Siemens Mobility and transport enterprises like Deutsche Bahn will speak about their market requirements. The Speakers' Corner has compact and high-level lectures on its program. It is here where exhibitors will not only present their products and services but also address issues that are currently causing concern in the sector.

## The National Platform on the Future of Mobility will present its work

A further partner for the framework program is the National Platform on the Future of Mobility (NPM). It will discuss the challenges of the future mobility in Germany from the point of view of standardisation and certification. Furthermore, representatives from politics and economy who are participating in the platform will present their work and discuss with the trade public.

**www.mobility-electronics.com**

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